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19  **Europäisches Patentamt**  
**European Patent Office**  
**Office européen des brevets**

11 Publication number:

**0 162 417**  
**A2**

12

## EUROPEAN PATENT APPLICATION

21 Application number: 85106016.0

51 Int. Cl.<sup>4</sup>: **B 65 D 77/06**  
**B 65 D 25/42**

22 Date of filing: 15.05.85

30 Priority: 22.05.84 DK 2497/84

43 Date of publication of application:  
27.11.85 Bulletin 85/48

64 Designated Contracting States:  
AT BE FR GB LU NL SE

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84 A disposable package for storing and transporting a liquid or viscous product.

87 A disposable package (1) for storing and transporting a liquid or viscous product such as for instance chocolate concentrate, and for dispensing said product in portions through a dispenser. This package comprises a rigid and load bearing outer cover (2), a flexible and tight bag (3) situated within said cover, and a stub (4) provided with a valve system (5). This valve system includes a cap-shaped body (17) of a flexible material, preferably rubber or plastics, and being connectable to a filling opening (27) in the dispenser (25). After a local cutting up of this body it forms a nozzle (17). The packed product can be dispensed from the inner bag (3) through the nozzle when the package is positioned in the dispenser (25) in such a manner that the nozzle (17) engages the filling opening (27) correctly. The nozzle (17) closes automatically when subjected to atmospheric pressure and opens when subjected to a low pressure in the filling opening (27) of the dispenser (25). Consequently, the product is dispensable in portions and possesses simultaneously a long storability in said package. Furthermore, the disposable package is easier and more hygienic to use in the dispenser than previously known, and the waste at the emptying is minimized.

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A disposable package for storing and transporting a liquid or viscous product

The invention relates to a disposable package for storing and transporting a liquid or viscous product such as for instance a chocolate concentrate and for dispensing said product in portions through a  
5 dispenser, said package comprising a rigid and load bearing outer cover, a flexible and tight bag situated within said cover, and a stub provided with a valve system.

Disposable packages of the above type are known  
10 which comprise a flexible, tight, inner bag. A product such as for instance coffee may be stored in this bag. The bag is situated in a rigid outer cover ensuring the necessary mechanical strength of the package during transport and storage. This known  
15 package can be opened through cutting, but it does not comprise a particular dispensing nozzle with an associated fixing means for emptying the package in a dispenser, and upon cutting up the package does not close automatically. The flexibility of the in-  
20 ner bag is not utilized either during the emptying procedure.

The object of the invention is to provide a disposable package of the above type, which can protect the packed product against bumps and impacts with-  
25 out leaking, and which can be opened and subsequently mounted in a dispenser for dispensing the packed product in portions in an easier and more hygienic manner than previously, and which simultaneously closes automatically in such a manner  
30 that the product is ensured a long storability in

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the dispenser after the package has been opened, and which furthermore can be almost completely emptied, which minimizes the waste.

The disposable package for storing and transporting  
5 a liquid or viscous product is according to the invention characterised in that the valve system comprises a cap-shaped body made of a resilient material, preferably rubber or plastics, and connectable to a filling opening in the dispenser, and which  
10 forms a nozzle after a local cutting up, the product being dispensable from the inner bag through said nozzle when the package is positioned in the dispenser in such a manner that the nozzle engages the filling opening correctly. Previously it was  
15 rather difficult to open the package and to decant the contents into another container or to secure a particular dispensing tube on the inner bag. This procedure has now been avoided, whereby the package is easy to use at the same time as the highest degree of hygiene is obtained since the packed product  
20 never touches non-sterile equipment.

According to the invention the nozzle may comprise a nozzle slit defined by two opposing lips on two opposing mouth members, said mouth members being of  
25 such a thickness and formed in such a manner that the lips are pressed together by a closing force which is so insignificant that the nozzle slit is opened when the nozzle is subjected to a low pressure at the activation of the dispenser in its filling opening, while the closing force, however, is  
30 so great that the nozzle slit is maintained tightly closed without leaking when the nozzle is subjected to atmospheric pressure. As a result, the dispensing

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nozzle closes automatically in such a manner that atmospheric air cannot be sucked into the inner bag and influence the packed product. Consequently, the storability of the packed product is not restricted  
5 due to for instance rancidying.

Moreover according to the invention fixing means may be provided on the inner bag preferably on or at the stub so as to ensure the correct position of the nozzle relative to the outer cover and conse-  
10 quently so as to ensure a correct engagement between the nozzle and the filling opening, whereby these fixing means can be made engaging guiding recesses in the outer cover. During the storage and transport the valve system can therefore be completely packed  
15 in the outer cover so as to be taken out and fixed on the outer cover when the package is to be used. The mounting of the package in the dispenser can subsequently be carried out in a very easy manner, viz. merely by positioning the package with the  
20 nozzle facing downwards on a ledge in the dispenser.

Furthermore according to the invention the fixing means on the inner bag may be formed by two radially projecting flanges situated on the stub and fixing the nozzle vertically relative to the outer cover,  
25 as well as by the preferably cylindrical part provided between said flanges of the stub and fixing the nozzle horizontally relative to the outer cover. In this manner a particularly simple and advantageous embodiment of the fixing means is obtained at the  
30 same time as these fixing means are reliably connected to the inner bag.

In addition according to the invention the guiding

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recesses in the outer cover may be shaped in at least one bottom panel, preferably a first, a second, and a third bottom panel initially folded about  $180^{\circ}$  inwards along a first set of folding lines at the rim of the cover and subsequently about  $90^{\circ}$  in opposite direction along a second set of folding lines, and these two sets of folding lines may be interspaced in such a manner that the nozzle engages the filling opening of the dispenser correctly when the fixing means on the inner bag engage the guiding recesses on the outer cover and said cover is situated in the dispenser. As a result, the valve system can easily be situated in the outer cover, the bottom panels being opened and the valve system being pulled out of the cover, whereafter the bottom panels are closed again in such a manner that their guiding recesses close about the stub. The vertical position of the nozzle in the outer cover is simultaneously determined in a simple and advantageous manner through a suitable choice of the distance between the two sets of folding lines.

Moreover according to the invention the guiding recesses in the outer cover may be formed substantially as a keyhole, the greatest width of which at least corresponds to the projecting flange of the stub, and the stub may thus be inserted on the broadest location of the keyhole-shaped recess and subsequently displaced into the fixing position at the narrowest location of the keyhole-shaped recess, the width of the recess corresponding to the outer diameter of the stub between the projecting flanges thereof on said narrowest location. In this manner the nozzle can be positioned quickly and easily in

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the correct position relative to the outer cover.

Furthermore according to the invention the keyhole-shaped guiding recess in the third bottom panel may be adapted in such a manner that a locking flap is left at the recess, which preferably perpendicular to the longitudinal axis of the recess can be folded upwards about a folding line at the broadest portion of the recess, whereby the stub can be inserted into the recess and the locking flap subsequently can be folded downwards into the plane of the bottom panel in such a manner that the stub is locked therein by the locking flap when it is displaced into its fixing position. As a result, the nozzle can in a simple and advantageous manner be fixed and retained in the correct position within the outer cover.

In addition according to the invention the inner bag may be made of a preferably airtight sheet laminate for instance made of metal and plastics and being heat-resistant and of a permanent shape up to 90°C, and the stub may be hermetically connected to said sheet laminate through heat contact welding, heat electro-magnetic percussion welding or other joining methods. In this manner for instance hot chocolate concentrate can be filled into the inner bag, and the packed product be protected against the influence of the air, whereby said product does not lose its storability for instance through rancidying. As the inner bag is flexible it can collapse about the packed product when the nozzle is subjected to a low pressure in the filling opening of the dispenser, whereby said packed product is pressed out completely and the waste is mi-

limited.

Moreover according to the invention the nozzle may initially be provided with a nozzle slit, and said nozzle slit may be tightly closed by means of a  
5 closing means such as a cap or a tape during the storing and the transport of the package. This embodiment comprises the advantage that the nozzle slit can be shaped simultaneously with the manufacturing of the nozzle in such a manner that the slit  
10 is not infected later on through cutting by means of for instance a non-sterile knife.

Finally according to the invention the nozzle may be made of a resilient material standing up to radiation sterilization and being resistant to food-  
15 stuffs, the material hardness being in the range of 40-70 shore, preferably 50-60 shore. In this manner the nozzle can pack tightly in the filling opening of the dispenser when the package is situated in the dispenser. Furthermore the slit can open and  
20 close resiliently, and foodstuffs stored in the inner bag obtain a long storability because the nozzle can be completely sterilized through radiation sterilization.

The invention will be described below with reference  
25 to the accompanying drawing, in which

Figure 1 illustrates an embodiment of a disposable package according to the invention situated in a dispenser, partly in section,

Figure 2 is a perspective view of the disposable  
30 package of Figure 1, whereby the dispensing nozzle

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has been cut up,

Figure 3 is on a larger scale an axial sectional view of an embodiment of a dispensing nozzle for the disposable package according to the invention,

5 Figure 4 is a side view of the embodiment of Figure 3,

Figure 5 is a top view of the embodiment of Figure 3,

Figure 6 is a sectional view taken along the line  
10 VI-VI of Figure 3,

Figure 7 is a top view of the disposable package according to the invention with the third bottom panel folded horizontally outwards,

Figure 8 corresponds to Figure 7, the third bottom  
15 panel, however, being folded into its position and the valve system being inserted into a first position in guiding recesses in the bottom panels, and

Figure 9 corresponds to Figure 8, the valve system being displaced into the fixing position and here  
20 locked by a locking flap folded downwards.

Figures 1 and 2 illustrate a disposable package 1 comprising an outer, rigid cover 2 and a flexible and tight bag 3 situated within the cover. A stub 4 provided with a valve system 5 is secured on the  
25 bag.

The outer cover 2 is made of a sheet material such



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as for instance fiberboard, cardboard or plastics cut into shape, whereafter the cover 2 is formed through folding about a plurality of folding lines. In the embodiment of Figures 1 and 2, the cover 2 comprises four horizontal side panels 6 forming a rectangular tube member, as well as four rectangular bottom panels situated at each opening of said tube member. The bottom panels can be folded inwards about folding lines along the rim portions of the side panels in such a manner that the cover is closed. The four lowermost bottom panels 7 form the bottom of the cover 2 and are secured when folded into their position against one another, e.g. by means of tape. The four uppermost bottom panels 8, 9, 10, and 11 can be folded outwards about folding lines along the uppermost rim portions of the side panels 6 in such a manner that the inner bag 3 can be inserted in the cover 2 whereafter the bottom panels 8, 9, 10, and 11 can be folded inwards so as to close the cover. One of the uppermost bottom panels is formed as a cover 11 forming the uppermost defining surface of the package when closed. The cover comprises a cover fold 12 in which a slit 13 is cut. When the cover 12 is closed a locking panel 14 cut out at the top of the side panel 6 opposing the folding line of the cover 11 can be folded upwards in such a manner that a locking panel fold 15 engages the slit 13 in the cover fold 12. In this manner the cover 11 is locked and the package 1 is ready for storing and transporting purposes.

The inner bag 3 is made of a flexible and tight laminate of sheet of for instance metal and plastics or of paper. The bag serves to store the product

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such as for instance chocolate concentrate to be packed. The product is filled in through the stub 4, whereafter the bag is closed by means of the valve system 5. The filled inner bag is subsequently inserted in the outer cover which is closed and locked as explained above.

The stub 4 is preferably made of plastics and is in the embodiment of Figures 1 and 2 of a circular cross section with a substantially cylindrical opening. The opening can be closed by means of the valve system which in the embodiment of Figures 1 and 2 is a plug member 16 preferably made of rubber or plastics, and a cover-shaped body 17 also preferably made of rubber or plastics. The inner bag 3 is closed by the plug member 16 and the associated cover-shaped body 17 being pressed tightly downwards into the opening of the stub 4.

When the filled package is to be used, i.e. used in a dispenser, the locking panel fold 15 is pulled out of the slit 13, a flap 18 on the locking panel 14 being subjected to a pull. Subsequently, the cover 11 is opened, and both the cover and the locking panel 14 are folded downwards along the side panels 6 of the outer cover 2 or carefully torn off. Subsequently, the stub 4 and the associated valve system 5 is pulled out of the outer cover 2 and secured to said cover by means of fixing means 19, 20, 21 engaging guiding recesses 22, 23, 24 in the bottom panels 8, 9, 10. The bottom wall of the cover-shaped body is cut through by means of a knife which for instance comprises a blade of a knife displaceable in a key-shaped handle. As a result, the cover-shaped body is converted into a nozzle 17 with a

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nozzle slit 29 allowing dispensing of the packed product from the inner bag.

The bag opened in the above manner forms now a unit which can be used directly in a dispenser 25 merely by turning the package and positioning said package with the nozzle facing downwards on a ledge 26 on the dispenser, i.e. without necessitating a decanting of any kind or a mounting of further members. The fixing means 19, 20, 21 engaging the guiding recesses 22, 23, 24 allow such a positioning of the nozzle 17 in the outer cover that said nozzle engages the filling opening 27 of the dispenser 25, said filling opening being adapted to be connectable to the nozzle. The disposable package according to the invention is therefore easier to use than the previous packages, and as the packed product does not touch non-sterile equipment, the highest degree of hygiene is obtained.

The activation of the dispenser 25 causes a low pressure in its filling opening 27, said low pressure opening the nozzle slit 29. This low pressure propagates to the interior of the bag 3 in such a manner that under the influence of the ambient atmospheric pressure the bag is pressed together about the packed product which is thereby pressed out through the open nozzle slit 29 of the nozzle 17 and downwards into the filling opening 27 of the dispenser 25.

Figures 3 to 6 illustrate the cover-shaped body 17. Initially this body serves to close for the filled inner bag 3. Upon cutting up in the bottom of a groove 30 this body can be converted into a nozzle

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17 with the nozzle slit 29 defined by two opposing lips 31 on two opposing mouth members 32. The groove 30 serves partly to guide the knife used for cutting the nozzle slit 29 in such a manner that this operation can be performed in the easiest possible manner, and partly to lower the nozzle slit 29 a distance downwards into the surrounding mouth members 32. Each mouth member comprises a bevelling 33 extending parallel to the groove 30 and determining the thickness of the mouth members. This bevelling has been chosen in such a manner that the mouth members press the lips 31 together about the nozzle 29 by a closing force which is so insignificant that the nozzle slit 29 is opened when the nozzle 17 in the filling opening 27 of the dispenser 25 is subjected to a low pressure, while the closing force, however, is sufficiently great for keeping the slit tightly closed when the nozzle is subjected to atmospheric pressure. As the nozzle consequently opens at activation of the dispenser and closes again immediately at deactivation of the dispenser, the disposable package according to the invention can be used for dispensing of the packed product in portions. At the same time a long storability in the dispenser is obtained as the nozzle 17 closes immediately upon removal of the low pressure, whereby it is avoided that air is sucked into the inner bag. Such air might otherwise influence the packed product and thereby limit the storability thereof, e.g. through rancidying.

The cover-shaped body 17 comprises a preferably cylindrical recess 34, the diameter of which is slightly smaller than the outer diameter of an inner upright stub member (not shown) on the plug

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member 16. The cover-shaped body 17 is assembled with the plug member 16 by the stub member thereof being pressed into the recess of the cover-shaped body. In this manner the valve system of Figures 1 and 2 appear. As long as the cover-shaped body 17 is not cut up, this valve system serves to close the filled inner bag, said valve system being pressed into the stub 4 in a tight and solid connection. As mentioned above, the cover-shaped body 10 is converted into a nozzle 17 through cutting, and this nozzle is thus situated in a solid connection with the stub 4 from the beginning.

The stub 4 comprises two projecting flanges 19 and 21, cf. Figures 1 and 2. These flanges fix the 15 nozzle 17 vertically in the outer cover 2, the stub 4 being situated in the guiding recesses 22, 23, 24 with the flange 19 on the inner side of the bottom panels 8, 9, 10 and the flange 21 on the outer side of these bottom panels. The cylindrical part 20 20 on the stub 4 between the flanges 19 and 21 fix thereby the nozzle 17 horizontally in the outer cover 2.

Initially the bottom panels 8, 9, 10 are folded about  $180^{\circ}$  inwards along a first set of folding 25 lines 35, 36, 37, cf. Figures 1, 2, and 7, and subsequently about  $90^{\circ}$  in opposite direction along a second set of folding lines 38, 39, 40. Through this folding the bottom panels 8, 9, 10 are lowered into the outer cover 2 at a distance corresponding 30 to the distance between the two sets of folding lines. When the package is positioned in the dispenser, cf. Figure 1, it stands therefore reliably by only the rim portions of the cover 2 resting on

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the ledge of the dispenser. The latter is due to the fact that the two sets of folding lines are interspaced in such a manner that the stub 4 and the plug member 16 do not project so far from the 5 bottom panels that they touch the ledge\_26 of the dispenser 25, whereas the nozzle 17 projects so far that it engages the filling opening 27 correctly. This engagement connecting the package to the dispenser is therefore established quite simply 10 merely by placing the opened package on the ledge 26 of the dispenser 25 with the nozzle facing downwards.

Figures 7, 8, and 9 show how the fixing means 19, 20, and 21 are situated in a particularly advantageous, keyhole-shaped embodiment of the guiding 15 recesses 22, 23, and 24. Figure 7 shows the guiding recesses 22, 23 in the first and the second bottom panel 8, 9, respectively, both folded into their position, and the guiding recess 24 in the third 20 bottom panel 10 folded horizontally outwards. In Figures 8 and 9 this bottom panel 10 is folded about the folding lines 37, 40 into its position above the bottom panels 8, 9. Then the guiding recesses 22, 23, 24 act as a keyhole-shaped guide 41 for the 25 valve system 5. A locking flap 42 is furthermore left in the recess 24 of the bottom panel 10, said locking flap being upwardly foldable about a folding line 23 at the broadest end of the recess 24.

The width of the guide 41 is at its broadest end 30 greater than the diameter of the flange 21 of the stub 4. Consequently, when the valve system 5 is to be positioned in the keyhole-shaped guide 41, the locking flap 42 is initially folded upwards

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about the folding line 43, and the stub 4 with the associated valve system 5 is then inserted upwards through the guide 41 on the broadest location thereof with the flange 19 of the stub 4 on the inner side of the bottom panels 8, 9, 10 and the flange 21 of the stub 4 on the outer side thereof. Now the stub 4 is in the first position shown in Figure 8 in the keyhole-shaped guide 41. Subsequently, the stub 4 is displaced from this position into the fixing position in the opposite end of the keyhole-shaped guide 41, where the width of the guide corresponds to the outer diameter of the cylindrical part 20 of the stub 4. Finally, the locking flap 42 is folded downwards into the plane of the bottom panel 10 whereby the stub 4 is locked in the fixing position shown in Figure 9. Instead of pulling the valve system upwards through the keyhole-shaped guide 41, the bottom panels can initially be opened in such a manner that it is easy to take out the valve system from the cover 2. Subsequently, the bottom panels can be folded again into their position with the guiding recesses 22, 23, 24 engaging the fixing means 19, 20, 21 of the stub 4. The third bottom panel 10 appears in the outermost position relative to the bottom panels 8, 9 in Figures 1, 2, 7, 8, and 9. The bottom panel may, however, also be positioned in the innermost position without thereby changing the effect of the guiding recesses 22, 23, 24.

The inner bag 3 is made of a preferably airtight, flexible sheet laminate, which in sequence from the inside and out may comprise for instance a plastic film of a thickness of 70  $\mu$ , a plastic film of a thickness of 12  $\mu$ , an aluminium film of a thickness of 8  $\mu$ , and a plastic film of a thickness

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of 40  $\mu$ , and whereby the plastic film used is heat-resistant and of a permanent shape up to 90°C. In this manner the inner bag 3 can stand filling of for instance hot chocolate concentrate up to this 5 temperature. The flexibility of the sheet laminate allows the inner bag 3 to collapse completely about the packed product when the package is used in the dispenser, and it can therefore be completely emptied almost without waste.

10 According to an advantageous embodiment according to the invention the nozzle 17 is initially provided with a nozzle slit 29. During the storage and the transport this slit is closed by a cap or a tape which is removed when the package is to be used 15 in the dispenser. As materials standing radiation sterilization are used for the nozzle, the nozzle slit 29 can be sterilized simultaneously with the nozzle 17 in such a manner that the nozzle slit 29 too is completely sterile when the package is used 20 in the dispenser. Care should be taken that it is not infected at a cutting up by means of a non-sterile knife.

The nozzle 17 is made of a flexible material of a hardness in the range of 40-70 shore, preferably 25 50-60 shore. This hardness allows at a suitable thickness of the material of the mouth members 32 of the nozzle 17 an opening of the nozzle slit 29 when the nozzle 17 is subjected to a low pressure in the filling opening 27 of the dispenser 25. Simultaneously the hardness allows a closing of the 30 slit without a leak when the nozzle 17 is subjected to atmospheric pressure. Furthermore the nozzle 17 can tightly abut the walls of the dispenser open-



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ing 27 through resilient deformation, when the package is positioned in the dispenser though the dispenser openings are not completely identical.

The invention is not limited to the above embodiments. Thus the outer cover may for instance be hexagonal or round, and the nozzle and the fixing means and the guiding recesses in the bottom panels may be formed in many other ways without thereby deviating from the scope of the invention.

Claims:

1. A disposable package for storing and transporting a liquid or viscous product such as for instance a chocolate concentrate and for dispensing said product in portions through a dispenser (25), said  
5 package (1) comprising a rigid and load bearing outer cover (2), a flexible and tight bag (3) situated within said cover, and a stub (4) provided with a valve system (5), characterised in that the valve system (5) comprises a cap-shaped body (17)  
10 made of a resilient material, preferably rubber or plastics, and connectable to a filling opening (27) in the dispenser (25), and which forms a nozzle (17) after a local cutting up, the product being dispensable from the inner bag (3) through said  
15 nozzle when the package (1) is positioned in the dispenser (25) in such a manner that the nozzle (17) engages the filling opening (27) correctly.
  
2. A disposable package as claimed in claim 1, characterised in that the nozzle (17) comprises a  
20 nozzle slit (29) defined by two opposing lips (31) on two opposing mouth members (32), said mouth members (32) being of such a thickness and formed in such a manner that the lips (31) are pressed together by a closing force which is so insignificant  
25 that the nozzle slit (29) is opened when the nozzle (17) is subjected to a low pressure at the activation of the dispenser in its filling opening (27), while the closing force, however, is so great that the nozzle slit (29) is maintained tightly closed  
30 without leaking when the nozzle (17) is subjected to atmospheric pressure.

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3. A disposable package as claimed in claim 1 or 2, characterised in that fixing means (19, 20, 21) are provided on the inner bag (3) preferably on or at the stub (4) so as to ensure the correct position of the nozzle (17) relative to the outer cover and consequently so as to ensure a correct engagement between the nozzle (17) and the filling opening (27), whereby these fixing means (19, 20, 21) can be made engaging guiding recesses (22, 23, 24) in the outer cover.

4. A disposable package as claimed in claim 1, 2 or 3, characterised in that the fixing means (19, 20, 21) on the inner bag (3) are formed by two radially projecting flanges (19 and 21) situated on the stub (4) and fixing the nozzle (17) vertically relative to the outer cover (2), as well as by the preferably cylindrical part (20) provided between said flanges (19 and 21) of the stub (4) and fixing the nozzle (17) horizontally relative to the outer cover (2).

5. A disposable package as claimed in one or more of the preceding claims 1 to 4, characterised in that the guiding recesses (22, 23, 24) in the outer cover (2) are shaped in at least one bottom panel, preferably a first (8), a second (9), and a third (10) bottom panel initially folded about  $180^{\circ}$  inwards along a first set of folding lines (35, 36, 37) at the rim of the cover (2) and subsequently about  $90^{\circ}$  in opposite direction along a second set of folding lines (38, 39, 40), and that these two sets of folding lines are interspaced in such a manner that the nozzle (17) engages the filling opening (27) of the dispenser (25) correctly when the fixing means (19, 20, 21) on the inner bag (3) engage the guiding re-

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cesses (22, 23, 24) on the outer cover (2) and said cover is situated in the dispenser (25).

6. A disposable package as claimed in one or more of the preceding claims 1 to 5, characterised in that the guiding recesses (22, 23, 24) in the outer cover (2) are formed substantially as a keyhole (41), the greatest width of which at least corresponds to the projecting flange (21) of the stub (4), and that the stub (4) thus can be inserted on the broadest location of the keyhole-shaped recess (41) and subsequently displaced into the fixing position at the narrowest location of the keyhole-shaped recess (41), the width of the recess corresponding to the outer diameter of the stub (4) between the projecting flanges (19 and 21) thereof on said narrowest location.

7. A disposable package as claimed in one or more of the preceding claims 1 to 6, characterised in that the keyhole-shaped guiding recess (24) in the third bottom panel (10) is adapted in such a manner that a locking flap (42) is left at the recess, which preferably perpendicular to the longitudinal axis of the recess can be folded upwards about a folding line (43) at the broadest portion of the recess, whereby the stub (4) can be inserted into the recess and the locking flap subsequently can be folded downwards into the plane of the bottom panel in such a manner that the stub (4) is locked therein by the locking flap (42) when it is placed into its fixing position.

8. A disposable package as claimed in one or more of the preceding claims 1 to 7, characterised in

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that the inner bag (3) is made of a preferably airtight sheet laminate for instance made of metal and plastics and being heat-resistant and of a permanent shape up to 90°C, and that the stub (4) is hermetically connected with said sheet laminate through heat contact welding, heat electro-magnetic percussion welding or other joining methods.

9. A disposable package as claimed in claim 1, characterised in that the nozzle (17) initially is provided with a nozzle slit (29), and that said nozzle slit (29) is tightly closed by means of a closing means such as a cap or a tape during the storing and the transport of the package (1).

10. A disposable package as claimed in one or more of the preceding claims 1 to 9, characterised in that the nozzle (17) is made of a resilient material standing up to radiation sterilization and being resistant to foodstuffs, the material hardness being in the range of 40-70 shore, preferably 50-60 shore.

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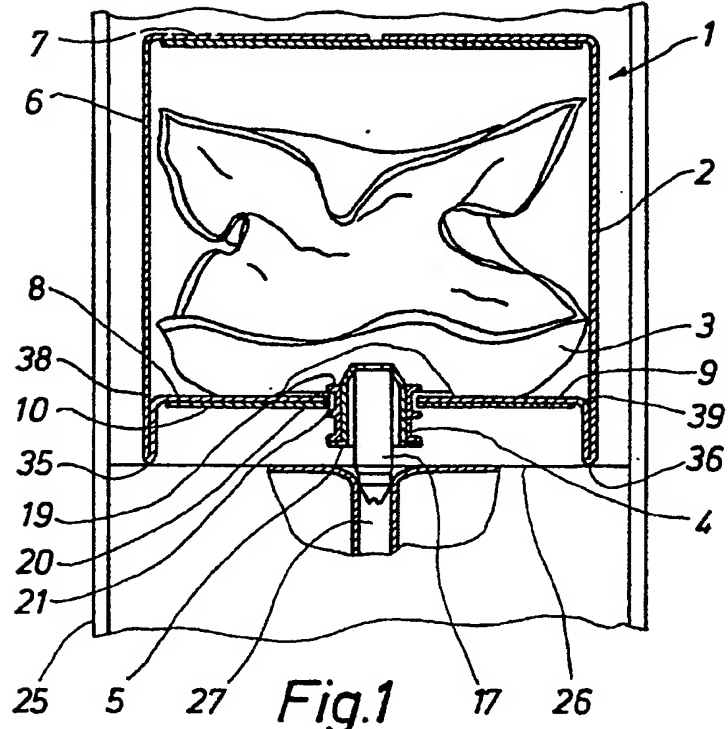


Fig.1

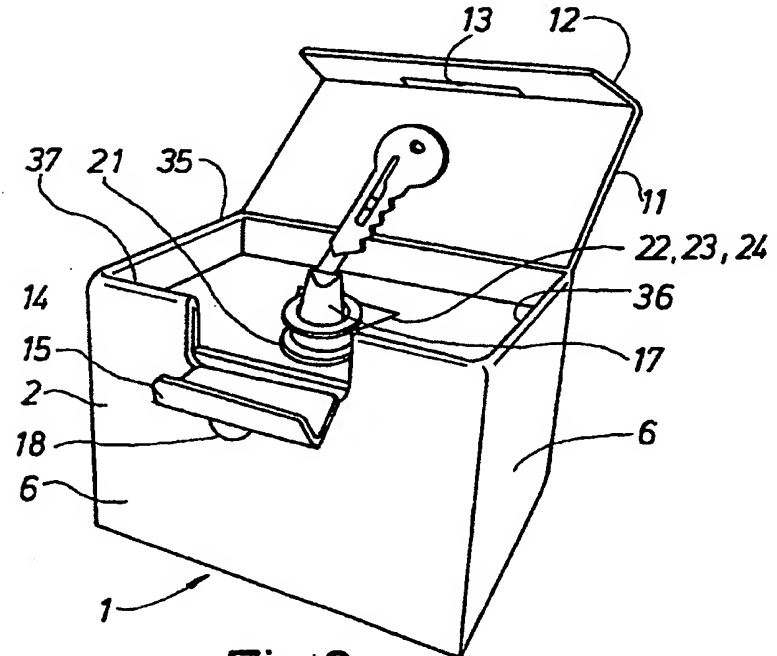


Fig.2

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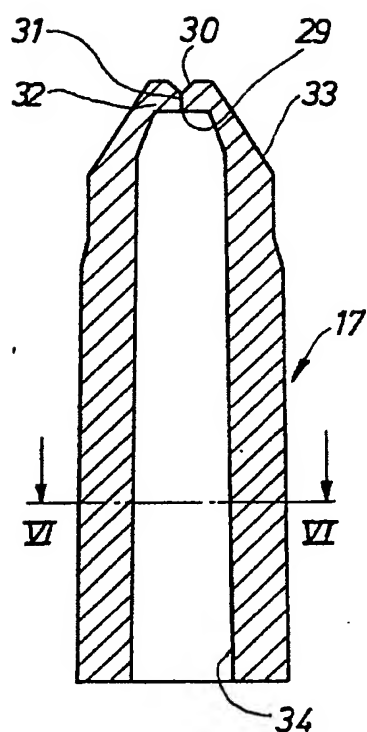


Fig. 3

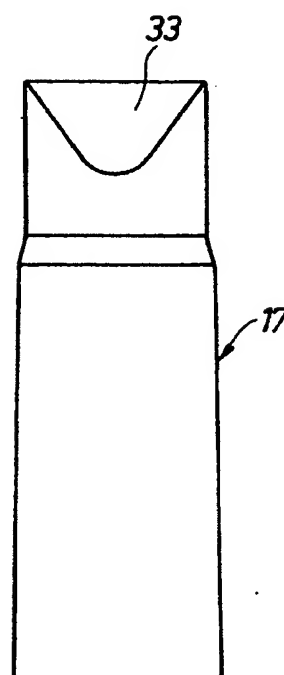


Fig. 4

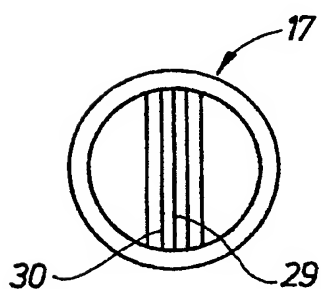


Fig. 5

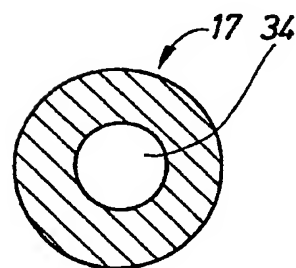


Fig. 6

